



Attorney Document No. 01395/LH

**IN THE UNITED STATES PATENT
AND TRADEMARK OFFICE**

Applicant(s): Katsuya SUZUKI et al
Serial No. : 09/897,750
Filed : June 29, 2001
For : SYSTEM AND METHOD FOR
PRESERVING MEDICAL DATA
Art Unit :
Examiner :

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R :

Please preliminarily amend the above-identified application
as set forth hereinbelow.

IN THE DRAWINGS:

Fig. 1 has been amended as indicated in red on the
accompanying copy thereof to add reference numeral "18" and its
associated lead line.

Fig. 10 has been amended as indicated in red on the
accompanying copy thereof to change "YYY" to "YYYY".

Submitted herewith are corrected sheets of Formal Drawing
and a Letter to the Official Draftsperson requesting approval
thereof.

CERTIFICATE OF MAILING

I hereby certify that this
correspondence is being
deposited with the United
States Postal Service with
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Commissioner for Patents,
Washington, D.C. 20231 on the
date noted below.

Attorney Leonard Holtz

Dated: October 31, 2001

In the event that this Paper
is late filed, and the
necessary petition for
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in connection with this
Paper, to Account No. 06-1378.



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PATENT TRADEMARK OFFICE

20090920-0640

IN THE ABSTRACT:

Please replace the Abstract of the Disclosure at page 28 of the application with the following:

ABSTRACT

Medical image data such as image data produced by an endoscope system and stored in a mass storage device that is installed in a medical institution are backed up in a backup server over the Internet. The backup server is managed by a service provider, according to a contract made by a service receiver with the service provider. Moreover, the service receiver makes a contract with the service provider by accessing a web server owned by the service provider at an endoscope server system or a personal computer connected to the Internet.

IN THE SPECIFICATION:

Please replace the paragraph at page 2, lines 13 to 23 with the following:

By the way, this kind of image data in general is large in size. Despite the advancement of data compression technology, the amount of data keeps on increasing these days. Therefore the amount of image information that can be stored on the premises of a medical institution has a limit. Moreover, generally speaking, there is a fear that stored

data may be lost due to an unforeseen happening. Thus, a plurality of backup facilities must be installed in the institution. This invites an increase in costs. Besides, the conventional data management cannot be said to be perfect.

Please replace the paragraph at page 2, line 24 to page 3, line 5 with the following:

On the other hand, the aforesaid well-known image data use form for the construction of a system for storing (recording) and managing image information in a predetermined server over the Internet has an inconvenience in that it requires dedicated software to present recorded images when downloaded. Consequently, image data can be utilized only in a complicated manner.

Please replace the paragraph at page 11, lines 13 to 25 with the following:

A potential user accesses the web server 110 at a terminal (a terminal device in which a typical browser runs, for example, a personal computer) connected to the Internet 1, such as, the endoscope server system 13 (#1). The potential user having accessed the web server 110 selects any of various backup modes offered by a service provider,

and makes a contract with the service provider (#2). The contract is made using any of various methods that utilize networks (the Internet), wherein the methods include existing methods and methods to be devised in the future. The details of the methods have no direct relation to the present invention, and the description of the methods is therefore omitted.

Please replace the paragraph at page 15, lines 14 to 22 with the following:

As mentioned above, the medical data preservation system of the present embodiment automatically and inexpensively preserves a backup copy of medical data, which is acquired at a medical institution, in compliance with a user's need (or a need of a person concerned in a medical institution) over a communication line established outside the medical institution such as the Internet. Consequently, a large amount of valuable data such as medical data can be surely kept.

Please replace the paragraph at page 18, lines 14 to 15 with the following:

Next, examples of the aforesaid system for use as a medical data preservation system will be described below.

Please replace the paragraph at page 19, lines 17 to 23 with the following:

From a patient point of view, the above system appears as if a manager (manufacturer) of a backup server issued a patient-specific clinical recording. As shown in Fig. 10, the name of a manufacturer acting as a provider may be shown on a patient-specific clinical recording, resulting in working as an effective advertisement of the system and manufacturer.

IN THE CLAIMS:

Please substitute amended claims 1-4, 6, 7, 9, 10, 12-15, 17 and 18 as follows:

1. (Amended) A medical data preservation system comprising:

medical data receiving means for receiving electronic medical data including medical information over a communication line;

a data storage device in which the medical data received by said medical data receiving means is stored;

storage condition designating means for use in designating a condition for storage in said data storage device; and

control means for controlling a data-stored state of said data storage device according to the condition for storage designated by said storage condition designating means.

2. (Amended) A medical data preservation method
comprising:

receiving electronic medical data including medical
information over a communication line;

5 storing the received medical data in a data storage device;
designating a condition for storage in said data storage
device; and

controlling a data-stored state of said data storage device
according to the designated condition for storage.

3. (Amended) A medical data preservation method for
controlling backup of medical image data using a programmed
computer, comprising:

5 selecting a backup mode in which medical image data is
backed up;

backing up medical image data in a selected backup mode;
performing accounting according to the selected backup mode.

4. (Amended) A medical data preservation system
comprising:

5 an image backup device for preserving a backup copy of
medical image data over a network over which information can be
transferred; and

control means for controlling the image backup device
according to a backup mode.

6. (Amended) A medical data preservation system according to Claim 5, wherein said control means controls a plurality of objects of backup according to respective determined backup modes, and performs accounting on each object of backup.

7. (Amended) A medical data preservation system according to Claim 4, wherein said control means and performs accounting according to the backup mode.

9. (Amended) A medical data preservation system according to Claim 8, wherein said control means can control a plurality of objects of backup according to respective determined backup modes, and performs accounting on each object of backup.

10. (Amended) A medical data preservation method comprising:

selecting a backup mode from among a plurality of backup modes, and designating the selected backup mode as a backing up method; and

backing up medical image data, which is stored in a storage device, in an image backup device over a network according to the designated backing up method.

12. (Amended) A medical data preservation method according to Claim 10, wherein all of the medical image data stored in said

storage device is backed up at a time in said image backup device at any set time.

13. (Amended) A medical data preservation method according to Claim 10, wherein all of the medical image data stored in said storage device, acquired at respective medical institutions, is backed up at a time in said image backup device.

14. (Amended) A medical data preservation method according to Claim 10, wherein all of the medical image data stored in said storage device is backed up for each patient at a time in said image backup device.

15. (Amended) A medical data preservation method according to Claim 10, wherein all the of medical image data stored in said storage device is backed up for each examination at a time in said image backup device.

17. (Amended) A medical data preservation method comprising:

selecting a backup mode from among a plurality of backup modes and designating the selected backup mode as a backing up method;

backing up medical image data, stored in a storage device, in an image backup device over a network according to the designated backing up method; and

performing accounting so as to calculate a charge for backup
10 according to the selected backup mode.

18. (Amended) A medical data preservation method according
to Claim 17, wherein a charge for backup is calculated as a
product of an accounting point, depending on the selected backup
mode, a period during which backup is continued, and a backup
5 rate.

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R E M A R K S

Consideration of this application as preliminarily amended is respectfully requested.

THE DRAWINGS

Fig. 1 has been amended as indicated in red on the accompanying copy thereof to add reference numeral "18" and its associated lead line. (See the disclosure at page 7, lines 6-14 of the accurate English translation submitted concurrently herewith.) And Fig. 10 has been amended as indicated in red on the accompanying copy thereof to change "YYY" to "YYYY". In this connection, it is noted that "year" data is conventionally given in four digits, as now indicated by the four "Y's" shown in amended Fig. 10. Submitted herewith are corrected sheets of Formal Drawing and a Letter to the Official Draftsperson requesting approval thereof.

THE ABSTRACT, SPECIFICATION, and CLAIMS

The abstract, specification and claims have been amended to correct minor informalities of which the undersigned has become aware.

Submitted herewith are marked copies of the changed pages to show that no new matter has been added.


It is respectfully requested that the amendments to the abstract, specification and claims be approved and entered.

And it is respectfully submitted that the amendments to the claims are not related to patentability and do not narrow the scope of the claims either literally or under the doctrine of equivalents.

In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,


Leonard Holtz, Esq.
Reg. No. 22,974

Dated: October 31, 2001

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VERSION SHOWING CHANGES MADE

- 2 -

in the field of medicine. For example, a local area network (LAN) is constructed on the premises of hospitals or any other medical institutions, and the LAN is connected to the Internet. Consequently, a user can transfer various kinds of data irrespective of whether he/she is in the medical institution. Medical information including medical image data produced by an endoscope system or the like is utilized in various forms over networks.

For example, according to an image data use form that is well-known, information including medical image data is stored (recorded) in a predetermined server, and dedicated software is used to retrieve or read the image data.

13 By the way, this kind of image data in general ^{is} ~~has a~~ ^{in size} large amount. Despite the advancement of ~~X~~ data compression technology, the amount of data keeps on increasing these days. Therefore the amount of image information that can be stored on the premises of a medical institution has ^a ~~its~~ limit. Moreover, generally speaking, there is a fear that stored data may be lost due to an unforeseen happening. ^{Thus,} ~~In~~ ~~case of the unforeseen happening,~~ a plurality of backup facilities must be installed in the institution. This invites an increase in costs. Besides, the ^{conventional} ~~data~~ management cannot be said to be perfect.

24 On the other hand, the aforesaid ^{well-known} image data use form for the construction of a system for storing (recording) and

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managing image information in a predetermined server over
the Internet has ^{an inconvenience in that it requires} ~~such inconveniences as need~~ dedicated
software to present recorded images when downloaded.

Consequently, image data can be utilized only in a

§ complicated ~~stereotyped~~ manner.

OBJECT AND SUMMARY OF THE INVENTION

Accordingly, an object of the present invention is to
provide a medical data preservation system and a medical
data preservation method for reliably and inexpensively
producing and managing a backup copy of data over a
communication line, in compliance with a user's need.

Briefly, according to the present invention, there is
provided a medical data preservation system comprising a
medical data receiving means, a medical data storage means,
a storage condition designating means, and a control means.
The medical data receiving means receives electronic medical
data including medical information over a communication line.
The medical data received by the medical data receiving
means is stored in the medical data storage means. A
condition for storage in the medical data storage means is
designated at the storage condition designating means. The
control means controls the data-stored state of the medical
data storage means according to the condition for storage
designated at the storage condition designating means.

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institution uses a terminal such as the endoscope server system 13 to access the web server 110 over the Internet 1. The user then designates any of various types of contracts for provision of the service provider and works out the terms of a contract. Needless to say, access to the web server 110 can be made not only at the endoscope server system 13 but also at any terminal that is a personal computer connected to the Internet 1.

Next, a use form of the medical data preservation system will be described by taking examples.

(1) Working out the terms of a contract (see Fig. 2 and Fig. 3)

13 A potential user accesses the web server 110 at a terminal (a terminal device in which a typical browser runs, for example, a personal computer) connected to the Internet 1, such as, the endoscope server system 13 (#1). The potential user having accessed the web server 110 selects any of various backup modes offered by a service provider, and makes a contract with the service provider (#2). The contract is made using any of various methods that utilize networks (the Internet), wherein the methods include existing methods and methods to be devised in the future. The details of the methods have no direct relation to the present invention, and the description of the methods is therefore omitted.

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Image data stored in the endoscope server system 13 may be stored in the mass storage device 14 (#23). It is designated whether data is stored in the mass storage device 14 periodically (for example, at a certain time during night) or every time the endoscope system 12 is used to perform examination.

(4) Backup job (see Fig. 6)

Based on the terms of a contract (backup mode), the backup server 100 receives predetermined medical image data and management information from the mass storage device 14 over the Internet 1, and stores (records) the data and information (#31). Thereafter, the backup copy is preserved and managed based on the terms of the contract (#32).

14 As mentioned above, the medical data preservation system of the present embodiment automatically and inexpensively preserves a backup copy of medical data, which is acquired at a medical institution, in compliance with a user's need (or a need of a person concerned in a medical institution) over ^asuch communication line established outside the medical institution ^{such} as the Internet. Consequently, a large amount of valuable data such as
22 medical data can be surely kept.

Incidentally, according to the present embodiment, the Internet is supposedly adopted as a communication line over which an intra-institution network (LAN) constructed in a

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Moreover, instead of merely renting a server area, a presentation tool or any other software may be provided. Specifically, as shown in Fig. 8, it may provide as a basic set, a presentation tool that can manage clinical records of 100 cases, for example. The presentation tool presents orderly-arranged images as if to present an electronic album. A storage area for data of a unit of 50 cases may be provided as an additional area.

Moreover, if the presentation tool is also made usable at terminal equipment installed in institutions (for example, medical institutions 10, 20, etc. shown in Fig. 1), data can be shared among the institutions and it becomes more convenient.

14 Next, ~~another~~ ^{system} examples of the aforesaid ^{use as} use for ~~of~~ a
15 medical data preservation system will be described below.

Fig. 9 and Fig. 10 are explanatory diagrams showing use forms of medical data preservation systems in accordance with third and fourth embodiments of the present invention.

As shown in Fig. 9, medical image information shall be treated in the form of a clinical recording at a predetermined medical institution 201. The medical data preservation system stores a backup copy of medical information data, for example, patient data in the form of a clinical recording in a backup server 202. At this time, if an identification (hereinafter ID) number is assigned to

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each patient, the clinical recording of the patient can be retrieved from the backup server 202 by entering the patient ID number even at another medical institution 203, that is, another hospital.

Moreover, a new service described below may be provided by treating medical image information in the form of a clinical recording. Specifically, a manager of a backup server converts the form of a clinical recording into a form understandable by any patient, and stores the resultant data in the server. As mentioned above, a system by which a patient can acquire his/her own clinical recording from the backup server by entering his/her patient ID number is assumed. According to the system even a patient who is not an expert in medicine can acquire his/her own clinical recording understandable by himself/herself and it becomes more convenient.

17 From a patient's point of view, the above system appears as if a manager (manufacturer) of a backup server issued a patient-specific clinical recording. As shown in Fig. 10, the name of a manufacturer acting as a provider may be ^{shown} ~~appeared~~ on a patient-specific clinical recording, resulting in working as an effective advertisement of the system and manufacturer.

23 The patient-specific clinical recording may be printed out to be sent to a patient by mail, or data of a clinical

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WHAT IS CLAIMED IS:

1. A medical data preservation system comprising:

[a] medical data receiving means for receiving electronic medical data including medical information over a communication line;

a [medical] data storage [means] ^{device} in which the medical data received by said medical data receiving means is stored;

[a] storage condition designating means for use in designating a condition for storage in said [medical] data storage [means] ^{device}; and

a control means for controlling [the] ^a data-stored state of said [medical] data storage [means] ^{device} according to the condition for storage designated [at] ^{by} said storage condition designating means.

2. A medical data preservation method comprising:

[a medical data receiving step of] receiving electronic medical data including medical information over a communication line;

[a medical data storing step of] storing the ^{received} medical data [received at said medical data receiving step] in a [medical] data storage [means] ^{device};

[a storage condition designating step of] designating a condition for storage in said [medical] data storage [means] ^{device};

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and

[a control step of] controlling ^athe data-stored state of said [medical] data storage [means] ^{device} according to the ^{designated} condition for storage [designated at said storage condition designating step].

3. A medical data preservation method for controlling backup of medical image data using a programmed computer, comprising [the steps of]:

selecting a backup mode in which medical image data is backed up;

backing up medical image data in a selected backup mode;

performing accounting according to the selected backup mode.

4. A medical data preservation system comprising:

an image backup device for preserving a backup copy of medical image data over a network over which information can be transferred; and

[a] control means for controlling the image backup device according to a backup mode.

5. A medical data preservation system according to Claim 4, wherein the backup mode is determined through

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discussion between a service provider and a service receiver.

6. A medical data preservation system according to Claim 5, wherein said control means controls a plurality of objects of backup, [controls the objects of backup] according to [a]^{respective} determined backup [mode]^{nodes}, and performs accounting on each object of backup.

7. A medical data preservation system according to Claim 4, wherein said control means [controls said image backup device according to a backup mode, and] performs accounting according to the backup mode.

8. A medical data preservation system according to Claim 7, wherein said backup mode is determined through discussion between a service provider and a service receiver.

9. A medical data preservation system according to Claim 8, wherein said control means can control a plurality of objects of backup, [controls the objects of backup] according to [a]^{respective} determined backup [mode]^{nodes}, and performs accounting on each object of backup.

10. A medical data preservation method comprising:

move — [a method of] backing up medical image data, which is →

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→ stored in a storage device, in an image backup device over a network, and according to the designated backing up method
[a method of] selecting a backup mode from among a plurality of backup modes, and designating the selected backup mode as ^a[the] backing up method, and

11. A medical data preservation method according to Claim 10, wherein the medical image data is stored in said storage device, and backed up in said image backup device.

12. A medical data preservation method according to Claim 10, wherein all of ^{the} medical image data stored in said storage device is backed up at a time in [an] ^{said} image backup device at any set time.

13. A medical data preservation method according to Claim 10, wherein all of ^{the} medical image data stored in said storage device, [and] acquired at ^{respective} [each] medical [institution] ^{instit} is backed up at a time in ^{said} [an] image backup device.

14. A medical data preservation method according to Claim 10, wherein all of ^{the} medical image data stored in said storage device is backed up for each patient at a time in [an] ^{said} image backup device.

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15. A medical data preservation method according to Claim 10, wherein all of ^{the} medical image data stored in said storage device is backed up for each examination at a time in ^{said} [an] image backup device.

16. A medical data preservation method according to Claim 10, wherein the backup mode is selected and designated based on a backup period and/or an amount of data to be backed up.

17. A medical data preservation method comprising:

[a method of] backing up medical image data, stored in a storage device, in an image backup device over a network;

[a method of] selecting a backup mode from among a plurality of backup modes and designating the selected backup mode as ^{the} [the] backing up method; [and]

[a method of] performing accounting so as to calculate a charge for backup according to the selected backup mode.

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18. A medical data preservation method according to Claim 17, wherein ^a [the] charge for backup ^{is} calculated as a product of an accounting point, depending on ^{the selected} [a] backup mode, a period during which backup is continued, and a backup rate.

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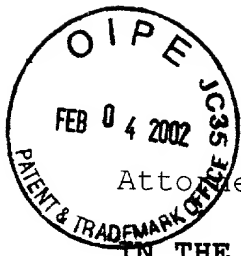
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~~ABSTRACT OF THE DISCLOSURE~~

~~According to the present invention,~~ ^MMedical image data such as image data produced by an endoscope system ^{and} stored in a mass storage device that is installed in a medical institution are backed up in a backup server over the Internet. The backup server is managed by a service provider, according to a contract made by a service receiver with the service provider. Moreover, the service receiver makes a contract with the service provider by accessing a web server owned by the service provider at an endoscope server system or a personal computer connected to the Internet.

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Attorney Docket No. 01395/LH

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LETTER TO THE OFFICIAL DRAFTSPERSON

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R :

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And Fig. 10 has been amended as indicated in red on the accompanying copy thereof to change "YYY" to --YYYY--.

Submitted herewith are corrected sheets of Formal Drawing incorporating the amendments. Approval and entry is respectfully requested.

Respectfully submitted,

Leonard Holtz
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Attorney: Leonard Holtz

Dated: October 31, 2001

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